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Photo. L. Lundberg

Type of "Roripa hispida (Desv.) Britton, var. glabrata Lunell," × 2/5.

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THE NEW ENGLAND BOTANICAL CLUB

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THE AMERICAN VARIETIES OF *RORIPPA ISLANDICA**

F. K. Butters and E. C. Abbe

In 1928 Fernald[1] pointed out the differences between the Old World *Rorippa islandica* (Oed. ex Murr.) Borbás (*R. palustris* (L.) Bess.)[2] and the common American plant which had been passing as *R. palustris*. At the same time he took up for the latter plant the name *Rorippa hispida* var. *glabrata* Lunell.[3] Two years later Marie-Victorin[4] interpreted Lunell's variety in the same sense. He differed from Fernald, however, in his views of the specific limits within this group, and accordingly published the new combination *Rorippa palustris* var. *glabrata* (Lunell) Vict.

Recently, an attempt to clear up the identity of certain Minnesota specimens belonging to the *Rorippa islandica* complex led us to an

* Contribution from the Herbarium of the University of Minnesota.

[1] See M. L. Fernald, Rhodora xxx. 131 (1928).

[2] In the paper cited above Fernald maintained the name *Rorippa islandica* for the European plant. Later (Rhodora xxxi. 17, 1929) he withdrew this name on the ground that the combination *Sisymbrium islandicum* Oeder, Fl. Dan. Tab. 409 (1768), upon which it is based, was not validly published. This combination was, however, validated by J. A. Murray in a paper in the *Novi Commentarii societatis regiae scientiarum Gottingensis* iii. p. 81 (1773). Murray attributes the combination *Sisymbrium islandicum* to Oeder, quotes Oeder's doubtful diagnosis, "Sisymbrium (islandicum ?) siliquis brevibus" etc. and then discusses Oeder's question as to whether the plant might be only a variety of *S. sylvestris*. His final conclusion, "Ob hasce notas, quae junctae nec in aliam Sisymbrii speciem quadrant, singularem ea constitui debere speciem arbitror," is perfectly definite. Murray's paper was presented July 4, 1772 but the date on the title page of the volume of *Commentarii* for 1772 is 1773, and the preface is dated April 20 of that year. This still leaves the date of the valid publication of *Sisymbrium islandicum* four years ahead of Pollich's *S. palustris*. Apparently the valid name of the species is *Rorippa islandica* (Oeder ex Murray) Borbás (see Rhodora xxxi. 18).

[3] J. Lunell, Bull. Leeds Herb. no. 2: 6. (1908).

[4] Frère Marie-Victorin, Le genre Rorippa dans le Québec. Contrib. Lab. Bot. Univ. Montréal no. 17: 15 (1930).

examination of Lunell's type of "*Roripa hispida* var. *glabrata*," now in the Herbarium of the University of Minnesota. To our surprise it proved to be not the common narrow-podded glabrous plant of eastern North America, but quite a different plant with unusually large, short-ellipsoid pods and nearly entire upper leaves (see Plate 588).

Lunell's original description is extremely brief: "**RORIPA HISPIDA (DESV.) BRITTON**, var. **GLABRATA LUNELL**, n. var. The whole plant shining, glabrous. Occasionally among the main form." Incidentally not one of the four plants on his type sheet (clearly designated as such) is wholly glabrous. One of them is nearly so, though with about a dozen bristly hairs just below the inflorescence, while the other three are sparingly hispid throughout the upper half of the stem and on the auricles and midribs of the leaves. The plants appear to have been partly flooded earlier in the season (there was a piece of *Lemna trisulca* entangled among the roots of one of them), and are entirely denuded of leaves for 15–20 cm. at the base. All but one of the leaves present are rhombic-lanceolate or narrowly elliptic, rounded at the apex, nearly entire, slightly sinuate, or occasionally with one or two poorly marked teeth toward the base. The single exception, the lowest leaf still present on one of the plants, though only 2½ cm. long, including the petiole, has two fairly marked, rounded teeth on each side toward the base and a spatulate terminal lobe.

It is to be noted that at the time that Lunell described this variety he was collecting both of the common eastern varieties and was naming them "Roripa palustris" and "Roripa hispida" respectively, and he evidently thought of his new variety as a glabrous form of the latter, which is evidently very close to its true status. We should be inclined to relegate it to the status of a form but for the following considerations: First, it seems to have a geographical distribution of its own. While it apparently does not occur at all in the eastern range of *Rorippa islandica* var. *hispida*[1] it is of wide distribution in the far west, though judging from the small number of specimens, it is far from common. Aven Nelson's *Roripa terrestris globosa* was founded on essentially similar specimens from Idaho and Wyoming. We have

[1] Rorippa islandica var. **hispida**, comb. nov., *Brachilobus hispidus* Desv., Journ. Bot. iii. 183 (1814), *Nasturtium palustre* var. *hispidum* (Desv.) Gray, Man. ed. 2, 30 (1856).

We are following essentially the specific concept of Marie-Victorin (loc. cit.). Our reasons will be discussed later in this paper. We introduce this note here to avoid misunderstanding or unnecessary circumlocution in speaking of the various entities.

examined a sheet of his type number, and it agrees closely with Lunell's type, though the siliques are somewhat smaller and rounder, and the leaves a little more toothed.

Second. The foliage of the Lunell plant does not appear to owe its peculiarities entirely to the aquatic habitat. We have seen a specimen from New Mexico (*A. A. and E. Gertrude Heller* 3743, Santa Fe, June 22, 1897), evidently not aquatic, which has several of the basal leaves present. They are moderately pinnatifid with 2 or 3 pairs of small, oblong, round-tipped basal lobes and a large, rhombic, crenately toothed terminal lobe. From about the middle of the plant upward the leaves in this as in the Lunell plants are almost entire.

Third. Lunell's description of the plant as "shining" is hardly obvious in dried specimens, but all the specimens which we have seen have thickish leaves (probably somewhat fleshy in life) with unusually plane surfaces, and obscure lateral veins. They may well have been "shining" in the living condition.

Fourth. Most of the specimens of this entity have a large number of tricarpellate and tetracarpellate siliques. This is the abnormality which led Turczaninow to describe a new genus, Tetrapoma, for certain related Asiatic forms. It is very common in the long-podded *R. islandica* var. *occidentalis*[1] of the north Pacific coast and is reported by Busch as common in the Siberian plants which he calls "*Nasturtium hispidum* f. *Tetrapoma*,"[2] but we have not noted it in our ordinary eastern *R. islandica* var. *hispida*.

For these reasons Lunell's plant seems to be sufficiently distinct from var. *hispida* to be treated as a distinct though closely related variety. As far as American plants are concerned, Lunell's varietal name seems to be the oldest. Some of the fruits of Siberian plants figured by Busch[3] under the name "*Nasturtium palustre* var. *microcarpum* Rgl." are very similar to those of var. *glabrata* and the plants are described as glabrous. This combination, published, according

[1] Rorippa islandica var. **occidentalis** comb. nov., *Nasturtium terrestre* var. *occidentale* S. Wats. in Gray, Synoptical Flora i. 148 (1895); *Roripa pacifica* Howell, Fl. Northwest Am. 40 (1903); *Rorippa palustris* var. *pacifica* G. N. Jones, Univ. Wash. Publ. Biology v. 161 (1936).

Howell's *R. pacifica* was based directly on Watson's variety. Though Howell does not mention it, his change in the name was undoubtedly due to the fact that the name *R. occidentalis* was preoccupied by a Californian species. If treated as a variety of *R. islandica*, however, there is no bar to the use of Watson's varietal name and it should be restored.

[2] N. Busch. Flora Siberiae et orientis extremi, xxv. Cruciferae. 207. (1915).

[3] N. Busch, loc. cit., p. 202. However the stigmas shown in Busch's drawings are more capitate than those of our plant.

to Busch in 1861, of course greatly antedates Lunell's, but from the very meager information available it is impossible to say whether the plants are in all respects identical. It seems best therefore for the present to retain Lunell's varietal name for the west American plant as follows:

Rorippa islandica var. **glabrata**, comb. nov. *Rorippa hispida* var. *glabrata* Lunell, Bull. Leeds Herb. no. 2: 6 (1908). *Rorippa palustris* var. *glabrata* (Lunell) Victorin, loc. cit. p. 15 as to name only. *Roripa terrestris globosa* A. Nels., Bot. Gaz. 52: 264 (1911).—North Dakota to Idaho, south in the Rocky Mountains to New Mexico. The following specimens have been seen: North Dakota: Leeds, Benson Co., July 1, 1907, *J. Lunell* (type); same place and collector, July 22, 1909 and July 27, 1909. Idaho: Falk's Store, Canyon Co., July 22, 1910, *J. F. Macbride*, no. 275 (type collection of *Roripa terrestris globosa*); Twin Falls and Shoshone Falls, July 25, 1911, *A. Nelson and J. F. Macbride*, no. 1318. New Mexico: Santa Fe, June 22, 1897, *A. A. and E. Gertrude Heller*, no. 3743.

This disposition of *R. hispida* var. *glabrata* Lunell leaves our common North American glabrous plant with narrow pods without a name, and we are proposing to call it *Rorippa islandica* var. *Fernaldiana*[1] after Professor M. L. Fernald who first definitely pointed out the distinctions between this and the European form of the species.

To the differences pointed out by Fernald may be added that the silique in this American plant is frequently narrowly ovoid rather than elliptic-cylindric, and that it averages 2.6 times as long as wide, while the well-developed lower siliques of European plants average 3.6 times as long as wide (the upper siliques in any given inflorescence are apt to be somewhat shorter), more nearly cylindric, and often a little falcate.

In regard to the specific or varietal character of these differences there is certainly room for difference of opinion. In 1928 Fernald treated the American plants as varieties of one species, and the European (occurring also sparingly in northeastern North America) as another. Two years later Marie-Victorin treated them all as varieties and forms of a single species. Similar disagreement is found in recent treatments of Asiatic forms. Thus Busch[2] maintains in

[1] Rorippa islandica var. **Fernaldiana**, nom. nov. Planta glabra vel fere glabra, plerumque crassa, foliis haud tenuibus, iis inferioribus lyrato-pinnatifidis vel crasse pinnatim dentatis praesertim ad basin, lobo terminali ovato majore, iis superioribus minus dentatis vel subintegris; siliquis longe ellipsoideis vel ovoideis, ca. 2.5-plo longioribus quam latis.—*Roripa hispida* var. *glabrata* Fernald, loc. cit., p. 133, not Lunell. *Rorippa palustris* var. *glabrata* Victorin, loc. cit., p. 15, as to the plant described, not as to the name-bringing synonym.
Type in Herb. Minn., Wet places, Ft. Fairfield, Maine, *M. L. Fernald*, July 6, 1893.
[2] N. Busch, loc. cit. pp. 201–209 (1915).

Siberia "*Nasturtium palustre*" with a var. *genuinum* (long-podded) and a var. *microcarpum* (short-podded) and "*Nasturtium hispidum*" with two forms, while Hultén[1] regards them all as varieties of "*Nasturtium palustre.*" It seems that the exact relation of the plants of this intricate plexus can only be settled by some one who has access to large collections of specimens from various parts of both hemispheres and who is also willing to grow the various forms experimentally and thus eliminate the large ecological differences which undoubtedly occur within each of the genetic categories.

Specifically, what is the behavior of these plants in eastern Siberia between Lake Baikal and the Pacific where typical *Rorippa islandica* and var. *hispida* both occur? The figures of the two plants in Busch's treatment show the same differences in leaf form that obtain between European and North American plants of these entities, but do they maintain these differences consistently? At least we know that the fruit distinctions break down in that region, for Busch's figures of the fruits of the glabrous "*Nasturtium palustre* var. *microcarpum* Rgl." are very similar to the fruits of American var. *hispida.*

Another reason for treating all these entities as varieties of a single species is that a certain number of specimens appear in a large collection which do not fit well into any of the described forms, and often combine the characters of two or more of them. This seems more consistent with the view that the whole plexus forms a single polymorphic species. Some of these peculiar forms rather suggest hybrids, but the requisite parents have the disconcerting habit of being half the world away, and it seems more probable that they represent merely unusual genetic combinations, possibly separation of usually linked genes, or expression of recessive characters that are submerged in nearly all the members of the local population.

It may be well to describe a few of these unusual specimens that we have noted:—

1. A plant collected by *Chas. C. Deam,* at Vanemons Pond, Wells Co., Ind. July 8, 1900. The leaves, both basal and upper, are essentially like those of European *R. islandica* including their thin texture, but the whole plant is strongly hispid. The pods are variable, some of them resembling var. *hispida,* others var. *Fernaldiana.*

2. Two collections from the central Rocky Mountain region: *Aven Nelson* 1415, Pole Creek, Wyoming, and *Marcus E. Jones* 505, Georgetown, Colo. In both of these the leaves are quite as thin as in any

[1] Eric Hultén, Flora of Kamtchatka and the adjacent islands. ii. 150 (1928).

European plant, but in other respects the plants are quite typical var. *Fernaldiana*. The Wyoming specimen is in flower only, the Colorado one in nearly mature fruit.

3. A plant from Portland, Oregon (*E. P. Sheldon*, no. 10972) with the foliage of the European type and the fruits of var. *hispida*. The whole plant is glabrous except for a very few hispid hairs on the auricles of the lower leaves.

4. A Minnesota plant from recently filled-in ground adjacent to Duluth harbor (*Olga Lakela*, no. 1501, July 9, 1936). The foliage is essentially that of var. *Fernaldiana*, the siliques are those of var. *glabrata* or in some cases intermediate between the latter and the Pacific coast var. *occidentalis*. Like both of these varieties it has numerous tricarpellate siliques. Its seeds are 0.9 mm. long, a size met elsewhere only in var. *glabrata*. From its habitat this plant is probably an introduction, or possibly a hybrid between introduced var. *glabrata* and the native var. *Fernaldiana*.

In making this study certain taxonomic criteria have been tested and it seems desirable to put on record briefly the results obtained.

SIZE AND SHAPE OF PODS: Absolute size of pods has very little significance except in certain extreme forms. The shape, reduced to a ratio $\frac{\text{Length}^1}{\text{Width}}$, is much more significant, and serves about as well to separate typical *R. islandica* from var. *Fernaldiana* as to separate the latter from var. *hispida*. In each case there is a certain amount of overlap. In this respect var. *glabrata* is very similar to var. *hispida*. The data are summarized in the following table:

	No. specs. m's'd	Pod length (mm.)		Pod width (mm.)		Pod length / Pod width	
		Aver.	Extremes	Aver.	Extremes	Aver.	Extremes
European							
R. ISLANDICA	14	6.8	4.2–10.7	1.9	1.3–2.4	3.6	3.1–5.5
var. FERNALDIANA	42	4.3	3.0– 6.4	1.6	1.2–2.5	2.6	2.0–3.4
var. HISPIDA	24	3.4	2.2– 4.6	2.1	1.7–2.8	1.6	1.1–2.2
var. GLABRATA	13	4.8	2.8– 5.5	2.7	1.9–3.7	1.8	1.3–2.9

LENGTH OF STYLE: In this character each variety shows certain tendencies, but there is so much overlapping that this character is far from diagnostic. It is apparently a genetic character, and is very uniform for each individual. In var. *Fernaldiana*, the length of the style is moderately variable (0.2) 0.3–0.6 (0.7) mm., with a quite normal distribution about the mean length of 0.5 mm. In each of the

[1] Length of pod was measured exclusive of the style.

other American varieties there is a tendency toward a bimodal curve, some plants being distinctly short-styled and others long-styled. Thus in var. *hispida* about a third of the plants examined have style-lengths of 0.45–0.50 mm., a slightly larger group have style-lengths of 0.7–0.8 mm., and nearly all the rest have still longer styles (up to 1.1 mm.). Only one plant out of 30 has a style-length between 0.5 and 0.7 mm. In var. *glabrata* most of the plants measured have style-lengths of 0.7–0.8 mm., but one plant has styles 1.1–1.4 mm. long. The total number of plants of this variety that we have seen is too small to give a clear picture of their variability in this feature. European *R. islandica* is very variable in this respect, but we have not measured enough plants to get any reliable statistics. The style-length in the dozen that we have seen varies from 0.25–0.80 mm. with a mean of 0.55 mm. and no particular evidence of dimorphism.

Shape of the Style: There seems to be a slight difference in this respect in the several varieties, but it is a little difficult to express in any quantitative fashion.

Shape of the Stigma: In European *R. islandica* the stigma is distinctly capitate, usually nearly 0.1 mm. wider than the upper end of the style. Judging from Busch's figures the same is true of the Siberian specimens.[1] In var. *Fernaldiana* the stigma is usually subcapitate, but less widened than in the European plant. In var. *hispida* and var. *glabrata* the stigma is about the same width as the top of the style, or often a trifle narrower.

Seed Characters: The surface of the seed is the same in all varieties. The shape and size vary a little, but scarcely significantly. The following table summarizes the dimensions as we have ascertained them:

	No. specs. m's'd	Seed length (mm.)		Seed width (mm.)	
		Average	Extremes	Average	Extremes
European R. islandica	9	0.58	0.5–0.7	0.47	0.40–0.55
var. Fernaldiana	34	0.52	0.4–0.6	0.44	0.35–0.45
var. hispida	23	0.60	0.5–0.7	0.44	0.35–0.50
var. glabrata	8	0.70	0.6–0.9	0.50	0.40–0.70

It is to be noted that in var. *hispida* and var. *glabrata* the seeds are somewhat longer in proportion to their width than in the other

[1] N. Busch, loc. cit. p. 202. It is notable that the only one of Busch's figures (fig. 5) which does not show the capitate style comes from South America! The others are all Siberian.

varieties, and in var. *glabrata* the seeds are distinctly larger than any of the others. These larger seeds are also more rounded in outline and less angular than those seen elsewhere in the species, but the difference is not very clear-cut.

All of these points seem to be of a "more or less" type, and therefore to indicate varietal rather than specific differences. The other differences noted by Fernald are wholly vegetative (shape, cutting, and texture of leaves and size of plant), occasional exceptions occur as noted above, and the vegetative characters do not always correlate with the reproductive ones. We are therefore inclined to feel that the differences between European *R. islandica* and the ordinary American forms are of the same order of magnitude as those between the various American forms and that the most satisfactory tentative treatment is that of Marie-Victorin—to regard all the major variants as varieties of a single polymorphic world-wide species.

DRABA APRICA IN THE OZARKS OF SOUTHEASTERN MISSOURI

Julian A. Steyermark

When Dr. Fernald revised *Draba* in Temperate Northeastern America,[1] the question arose as to whether *Draba brachycarpa* Nutt. var. *fastigiata* Nutt. should be included as a synonym under *D. aprica* Beadle. Specimens of this rare species had been collected by Beadle on Kenesaw Mountain, Georgia, in 1901, and again by Dr. Perry and Mr. Myers in 1934. Nuttall's type of *D. brachycarpa* var. *fastigiata* supposedly came from Arkansas, but there was some doubt as to whether his specimens actually came from Arkansas or from Georgia, because plants of *D. brachycarpa* from localities in Georgia were present on the same sheet as were the specimens collected by Nuttall. In view of such circumstances, the likelihood of confusion of data was possible. Students of the Arkansas flora were, therefore, urged to watch for the possible occurrence of this species in that state.

In the spring of 1939, while collecting along the Black River, in Reynolds County, southeastern Missouri, in an area which is threatened to be flooded by the construction of a dam, the writer chanced upon a strange-looking *Draba* growing in low open rocky woods in a

[1] Fernald, M. L., Draba in Temperate Northeastern America. Rhodora 36: 361–363. 1934.

broad valley of Black River. It was growing with typical *Draba brachycarpa* Nutt., but its taller unbranched stellate-hairy stems, remote and abbreviated corymbs arising from the middle and upper axils, together with the stellate-hairy siliques marked it as distinct from the commonly encountered *D. brachycarpa.*

Subsequent examination of the collection proved it to be *Draba brachycarpa* var. *fastigiata* Nutt., the same as *D. aprica* Beadle, and specimens were sent to Dr. Fernald for verification. In a letter received from him concerning the specimens, he states, "Your *Draba* is the best kind of *D. aprica* Beadle. It pretty clearly demonstrates that Nuttall's *D. brachycarpa* var. *fastigiata,* which has been a sort of spook, must have been a very dwarfed specimen of the same thing.

"We now have *D. aprica* in northern Georgia, Arkansas, and southeastern Missouri, which gives it a real range."

In other words, the collection of the Missouri specimens shows that *D. aprica* is not limited to Georgia, and that Nuttall's collection of *D. brachycarpa* var. *fastigiata* from Arkansas was authentically labelled, in view of the occurrence of the plant in the adjacent Ozarks of southeastern Missouri.

The writer's Missouri collections of this plant are in the Gray Herbarium and the Herbarium of Field Museum. They are taken from two counties: (1) St. Francis Shut-ins, 14 miles south of Fredericktown, Madison County, April 27, 1930, *J. A. Steyermark 1750;* and (2) growing with *D. brachycarpa* (22096) in alluvial low woods along Black River, between the mouth of Cave Spring Hollow and Logslide Bluff, T29N, R2E, Sect. 13 and 24, 6 miles northwest of Piedmont, Reynolds County, April 30, 1939, *J. A. Steyermark 22097.*

Field Museum of Natural History
Chicago, Illinois

THE GENUS ELLISIA

Lincoln Constance

Ellisia Nyctelea L., now generally recognized as a member of the tribe *Hydrophylleae* of the *Hydrophyllaceae,* was usually placed with various members of the *Boraginaceae* in pre-Linnean works. Linnaeus first attempted to fit the species into *Ipomoea,* then into *Polemonium* and finally took it as the basis for his genus *Ellisia,* with the comment, "Proprii generis planta est." However, he had previously used the

name *Ellisia* to designate a group of plants commonly referred to *Duranta* L. of the family *Verbenaceae*. Thus, *Ellisia* was from the first a homonym in the *Hydrophyllaceae* and additional names were substituted by later authors, so that *E. Nyctelea* has appeared under five different genera subsequent to the adoption of the binomial system of nomenclature.

Trew[1] proposed the names *Macrocalyx* (in reference to the accrescent fruiting calyx) and *Colpophyllus* (descriptive of the dissected leaves), both presumably based upon *E. Nyctelea*. Scopoli[2] segregated the genus *Nyctelea* from *Ellisia* because he thought the former to possess solitary seeds and the latter, two seeds in each capsule. The type species of *Nyctelea*, however, was the same as the original species of *Ellisia*, namely *E. Nyctelea*. Fortunately, *Ellisia* has now been conserved over all other names for this genus.

The writer[3] has proposed to retain *Ellisia* as a monotypic genus, removing *E. chrysanthemifolia* Benth., *E. micrantha* (Torr.) Brand and *E. Torreyi* Gray to *Eucrypta* Nutt. and *Ellisia membranacea* Benth. to *Pholistoma* Lilja. The disposition of those plants which have been erroneously referred to *Ellisia* is summarized in the section of the present article entitled "species excluded."

The reasons for the segregation of *Eucrypta* and *Pholistoma* have been fully presented in the paper herein cited. The species comprising *Eucrypta* possess placentae which are bifacially ovuliferous, a character sharply differentiating them from any other member of the same tribe. *Pholistoma* and *Ellisia* have closely similar fruits and seeds, but the characteristic prickly succulent and scandent habit of the former genus and its restriction to the southwestern United States and adjacent Mexico are but two of the more obvious features effectively dividing the two genera. *Ellisia* is about equally close to *Pholistoma* and to *Nemophila* Nutt., and Baillon[4] actually merged all three genera, together with the species of *Eucrypta* that were known to him, under *Ellisia*. The writer believes these to be distinct natural genera whose incorporation would subordinate and mask important points of difference between species-assemblages which may very possibly have had quite distinct points of immediate origin.

Many specimens of *Ellisia Nyctelea* examined have been labeled

[1] Nov. Act. Nat. Cur. **2**: 332 (1761).
[2] Introd. Hist. Nat. 183 (1777).
[3] Madrono **5**: 28–33 (1939).
[4] Hist. des Pl. **10**: 397 (1891).

"weed," and the occurrence of this plant in cultivated or disturbed soil has been similarly indicated. For this reason it would seem likely that at least the edges of the distributional pattern may be blurred by sporadic introduction. Occurrences which are *known* to be adventive are excluded from the accompanying map. *Leersia lenticularis*, *Panicum meridionale* and its var. *albemarlense*, *Festuca paradoxa* and *Carex crus-corvi*, as mapped by Fernald,[1] although they usually occur to the southeast, afford a precedent for species predominantly of the prairies and plains of the interior reappearing upon the Atlantic coastal plain. The existence of such a discontinuity in range might suggest that the plant is adventive near mouths of rivers. This may well be the case, but two difficulties with this explanation should not be overlooked: (1) that the species was collected "in Virginia," by Clayton, prior to 1753, and at Harper's Ferry, by Pursh, in 1806; and (2) that although *E. Nyctelea* occurs widely on the dry plains of Wyoming and elsewhere, its most eastern localities appear to be only in humid situations along streams.

The writer is grateful to Mr. Reed C. Rollins, of the Gray Herbarium, who has painstakingly combed the obscure literature pertaining to this and related genera, and to Mr. Ira W. Clokey, South Pasadena, who has lent specimens for examination. The curators of the following herbaria have been most kind in lending the material in their care: California Academy of Sciences (CA); Cornell University (CU); Field Museum of Natural History (F); Gray Herbarium (G); Royal Botanic Gardens, Kew (K); Missouri Botanical Garden (M); New York Botanical Garden (NY); Oregon State College (OS); Pomona College (P); Academy of Natural Sciences, Philadelphia (PA); Rocky Mountain Herbarium, University of Wyoming (RM); Dudley Herbarium, Stanford University (S); University of California (UC); University of Oregon (UO); United States National Herbarium (US); University of Washington (UW); State College of Washington (WS).

Taxonomic Treatment

Ellisia Nyctelea L. *Ipomoea Nyctelea* L., Sp. Pl., ed. 1, 160 (1753); *Polemonium ? Nyctelea* L., Sp. Pl., ed. 2, 231 (1762); *Ellisia Nyctelea* L., op. cit., 1662 (1763); *E. ambigua* Nutt., Gen. **1**: 118 (1818); *Macrocalyx Nyctelea* O. Kuntze, Rev. Gen. **1**: 434 (1891); *E. Nyctelea* var. *coloradensis* Brand, Pflanzenr. IV. **251**: 39 (1913); *Nyctelea Nyctelea* Britt. in Britt. & Br., Ill. Fl., ed. 2, **3**: 67 (1913); *N. ambigua*

[1] Rhodora **39**: 349, map 22; 478, maps 43 and 46; 327, maps 6 and 9 (1937).

Standley, Proc. Biol. Soc. Wash. **32**: 143 (1919); *N. americana* Moldenke, Bull. Torrey Club **59**: 156 (1932).—Delicate annual, simple or diffusely branched, 1–4 dm. high, or reduced and more compact; stems slightly succulent, angled, retrorsely hispid; cotyledons with an oblong-oval blade, 10–15 mm. long, 5–7 mm. broad, tapering slightly at base into a slender petiole of greater length; lowest leaves opposite, the others alternate; the lower oblong to ovate, 3–8 cm. long, 1–3 cm. broad, acute at apex and truncate or subcordate at base, pinnately divided into 7–13 oblong obtuse or acute divisions which are entire or again toothed; uppermost leaves smaller, deltoid-ovate and short-petioled, all sparingly hispidulous on both surfaces, hispid on the margins and on veins below, thin, membranous and venose; petioles of lower leaves about equalling blades, very narrowly winged and slightly clasping at base; flowers solitary, opposite the alternate leaves or several in a few-bracteate, secund, raceme-like terminal cyme; calyx broadly campanulate, cleft nearly to base into 5 lanceolate or ovate-lanceolate lobes, 3–5 mm. long, 1–2 mm. broad, auricles 0, but a sepaloid tooth present in the sinus in some specimens, both sepals and teeth bristly on the margins and more or less hispidulous on the surfaces; corolla 7–8 mm. broad, narrowly campanulate, white or bluish, the 5 oval lobes conspicuously shorter than the tube, the whole corolla shorter than or about equalling the calyx; corolla-scales oblong, minute, the free tips fimbriate; stamens 5, shorter than the corolla-tube, anthers about 0.2 mm. long, oval or oblong; pollen grains smooth, tricolpate; style 1–2 mm. long, cleft less than one-half; mature capsule 5–6 mm. in diameter, 1-celled, globose, hispid with scattered hairs, exceeded by the strongly accrescent, stellate-rotate calyx; seeds usually 4, 2–3 mm. in diameter, globose, dark brown, regularly reticulate; cucullus 0.—Type: "Habitat in Virginia. *D. Gronovius* [Clayton]."—Atlantic slope, principally on the Delaware, Susquehanna and Potomac rivers; prairies and plains from Michigan, Saskatchewan and Montana south to Oklahoma and New Mexico.—New York: Fort Washington, *Bicknell 7301* (NY, PA). New Jersey: Somerset, Mercer Co., *F. J. Hermann 4270* (M). Pennsylvania: Morrisville, Bucks Co., *James* (G, M); opposite Marietta, York Co., *Knipe* (F, PA). Maryland: Bald Friar, Cecil Co., *J. J. Carter* (G, NY); Great Falls of the Potomac, *Holm* (F, G). District of Columbia: Washington, *Morong* (M, NY), *Holm* (CA, G). Virginia: Bluemont, Loudon Co., *Standley 13197* (US); Potomac River, Fairfax Co., *Hotchkiss 1934* (CU). West Virginia: Harper's Ferry, Jefferson Co., *Pursh* (PA). Michigan: Lansing, Ingham Co., *Yuncker 91* (US). Indiana: Indianapolis, Marion Co., *Friesner 9596* (F); Crowleyville, Gibson Co., *Deam 50056* (F, G, M, NY). Wisconsin: Beloit, Rock Co., *T. J. Hale* (F, G, M, PA). Illinois: "Wabash", *Nuttall* (G, ? isotype of *E. ambigua*); Chicago, *H. H. Babcock* (G, US); Oquawka, Henderson Co., *H. N. Patterson* (G, M, NY, OS, PA, UC, US); Wady Petra, Stark Co., *V. H. Chase 1351* (M, PA, US); Peoria, Peoria Co.,

F. E. McDonald (G, NY, RM, US), *J. R. Churchill* (CU, G, M); Augusta, Hancock Co., *S. B. Mead* (G, M, NY, PA, US); Decatur, Macon Co., *Clokey 2409* (Clokey, M, NY, RM, US); Muncie, Vermilion Co., *Gleason* (CA, G, S). MINNESOTA: Nichols, Aitkin Co., *Sheldon* (G, NY, UC, US, WS); Winona, Winona Co., *Holzinger* (RM, UC, US). IOWA: Armstrong, Emmet Co., *Cratty* (M, NY, PA, S, US); Ames, Story Co., *Ball & Preston 468* (G, M, RM, US); Grinnell, Poweshiek Co., *M. E. Jones* (CA, G, M, P, RM, S, UC, US).

Map 1. Geographical Distribution of ELLISIA NYCTELEA

(Map used through the courtesy of the Standard Process & Engraving Co., Berkeley, California)

MISSOURI: Courtney, Jackson Co., *Bush 7922* (M, PA, S); St. Louis, *N. Riehl 184* (K, M, NY), *Eggert* (F, M, P, RM, UC, UO, US); Noel, McDonald Co., *E. J. Palmer 5427* (CU, M, P). ARKANSAS: "Arkansas," *Pitcher* (NY, PA); "N. W. Arkansas," *F. L. Harvey 196* (US). MANITOBA: Portage la Prairie, *Macoun & Herriot* (G). SASKATCHEWAN: *Bourgeau* (G, K); Medicine Hat, *Macoun 5544* (M, NY, US). NORTH DAKOTA: Lake Ibsen, Benson Co., *Lunell* (G, NY, RM); Fargo, Cass Co., *Bolley 160* (CU, G, NY, PA, RM). SOUTH DAKOTA: Fort Meade, *Forwood 362* (US); Fort Pierre, *Geyer 53* (K), *447* (US); Oreville, etc., *Rydberg 887* (G, K, NY, US). NEBRASKA: Fort Niobrara, *Wilcox* (NY); Lincoln, Lancaster Co., *J. L. Morrison 987* (M, US). KANSAS: Riley Co., *J. B. Norton 340* (G, M, NY, RM, US);

Osborne City, Osborne Co., *C. L. Shear 48* (F, G, NY, US); Paola, Miami Co., *Oyster* (CA, M). Oklahoma: "On the False Washita, between Fort Cobb and Fort Arbuckle," *E. Palmer 193* (NY, US); Alva, Woods Co., *G. W. Stevens 694* (G, M, NY, S, US); Fort Sill, Comanche Co., *Clemens 11740* (CA, M, RM). New Mexico: Sierra Grande, Union Co., *Standley 6162* (US). Colorado: Fort Collins, Larimer Co., *Crandall 1596* (F, M, RM, US); Cerro Summit, Montrose Co., *C. F. Baker 154* (G, M, NY, P, RM, S, UC, US, isotypes of *E. Nyctelea* var. *coloradensis*); Sangre de Christo Creek, Castilla Co., *Rydberg & Vreeland 5751* (NY, RM). Wyoming: Sheridan-Buffalo, *Tweedy 3505* (NY, RM, WS); Hulett, Crook Co., *L. O. Williams 2372* (G, M, US, WS); Halleck Canyon, Albany Co., *A. Nelson 7425* (G, M, NY, P, RM, US); Pole Creek, *A. Nelson 141* (CU, G, M, NY, P, RM, US). Montana: Fort Benton, *Pearsall 895* (US); Belt River, etc., *R. S. Williams 127* (NY, US); mouth of Shields River, *Scribner 166* (G, PA); Bozeman, Gallatin Co., *Blankinship 534* (F, M, PA); Pony, Madison Co., *Rydberg & Bessey 4858* (F, NY, US). Alberta: Rosedale, *M. E. Moodie 910* (Clokey, F, G, M, NY, RM, S, US).

The priority and validity of the specific name *Nyctelea* has not been questioned, and only the elevation of this epithet to generic rank, producing the tautonym *Nyctelea Nyctelea*, has made room for the introduction of alternate specific names. *E. ambigua* has generally been regarded as a slender and probably immature plant of *E. Nyctelea*. If that be the case, as the present writer is convinced it is, then *ambigua* would be the next available name for this species if *Nyctelea* were to supersede *Ellisia* in generic status. This was the avowed reason for the combination, *Nyctelea ambigua* Standley. Moldenke coined *N. americana* to fill the same supposed gap, apparently unaware that Standley's new name (to which Moldenke refers) had already closed it, and made *N. americana* a name totally unnecessary under any known code. With the conservation of *Ellisia*, the binomial *E. Nyctelea* is firmly established for this much named plant.

A supposed extreme western representative of the species, with a depressed and more pubescent habit and shorter styles, was the basis for var. *coloradensis* Brand. Even some of the isotypes do not conform to Brand's description, but pass readily into the usual slender and diffuse form. Typical *E. Nyctelea*, moreover, occurs much farther west than the type locality of the supposed variety, and the alleged varietal distinctions seem to be only habital modifications associated with a less favorable environment.

Species Excluded

1. *Ellisia chrysanthemifolia* Benth., Trans. Linn. Soc. **17**: 274 (1834). Eucrypta chrysanthemifolia (Benth.) Greene.

2. *E. fremontii* (Elmer) Brand, Pflanzenr. IV. **251**: 41 (1913). Nemophila pulchella Eastw. var. **fremontii** (Elmer), n. comb. (*N. fremontii* Elmer, Bot. Gaz. **41**: 319 (1906).)

3. *E. membranacea* Benth., op. cit., **17**: 274 (1834). Pholistoma membranaceum (Benth.) Constance.

4. *E. membranacea* var. *hastifolia* Brand, op. cit., 38 (1913). Pholistoma membranaceum (Benth.) Constance.

5. *E. micrantha* (Torr.) Brand, op. cit., 42 (1913). Eucrypta micrantha (Torr.) Heller.

6. *E. microcalyx* Nutt., Trans. Amer. Philos. Soc., n. s., **5**: 191 (1832). Nemophila microcalyx (Nutt.) F. & M.

7. *E. ranunculacea* Nutt., op. cit., 191 (1832). Phacelia **ranunculacea** (Nutt.), n. comb.

This name has always been considered a synonym of *N. microcalyx*, but Nuttall mentions "racemes 5–10?-flowered," whereas the flowers of *N. microcalyx* are always solitary. The reason for the confusion of Nuttall's two species seems to lie in the similarity of their leaf-form, which has led to their being mixed on herbarium sheets, even those in Nuttall's collections. An examination of a photograph of the type of *E. ranunculacea* at the British Museum and of authentic material at the Gray Herbarium, at Kew and at Philadelphia, clearly shows that *E. ranunculacea* is not only a *Phacelia*, but is conspecific with the plant that has been known as *P. Covillei* Wats. The Nuttallian name was validly published more than fifty years before that of Watson, and must, accordingly, supersede it.

8. *E. Torreyi* Gray, Proc. Amer. Acad. **20**: 302 (1885). Eucrypta chrysanthemifolia var. bipinnatifida (Torr.) Constance.

9. *E. Torreyi* var. *bipinnatifida* (Torr.) Brand, op. cit., 42 (1913). Eucrypta chrysanthemifolia var. bipinnatifida (Torr.) Constance.

10. *E. Torreyi* var. *Orcuttii* Gray, Synop. Fl. **1**, pt. 2, 413 (1888). Eucrypta chrysanthemifolia (Benth.) Greene.

11. *E. Torreyi* var. *paniculata* Brand, op. cit., 41 (1913). Eucrypta chrysanthemifolia (Benth.) Greene.

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NOTES ON THE FLORA OF WORCESTER COUNTY, MASSACHUSETTS—II

David Potter, N. P. Woodward, G. H. Pride and F. H. Howard

The first of this series of "Notes on the Flora of Worcester County, Massachusetts" was published in 1935.[1] Since that time botanical work has been actively carried on within the county which has added over 7000 sheets of Worcester County plants to the herbarium of the Hadwen Botanical Club and increased our knowledge of the known flora of the region by the following list of plants new to the county.

In addition to the list of plants new to the county, it is worthwhile noting that several rare plants have been found in other townships than those mentioned by Jackson,[2] or rediscovered after a lapse of several years.

Pellaea atropurpurea was first reported from the county in 1900 from the town of Berlin (Rhodora **2**: 14). This reference was used by Jackson in 1909 in his "Flora of Worcester County." This past summer what is apparently the original locality was revisited and specimens have been placed in the Herbaria of Clark University and the Worcester Natural History Society. This is the only known station in the county for this very rare fern.

Malaxis unifolia has been reported from Athol and Spencer in addition to former stations in Auburn, Worcester, Upton, Paxton, and Boylston. This seems to be a rather rare and local orchid. *Liparis liliifolia* holds the distinction of being one of the rarest plants in the county. Only one plant in one locality in Sturbridge is known. This single plant has persisted for several years. Jackson lists *Habenaria blephariglottis* from Princeton and *Orontium aquaticum* from Dudley and Princeton. No report since his time has come from Dudley; but it seems rather obvious that his station in Princeton was really in Holden for both these plants have been reported from the same place in this town very close to the Princeton border. This single station for *H. blephariglottis* has been known for many years, but *Orontium* was not reported since Jackson until 1917, and not again until the summer of 1938 when specimens were placed in the Herbarium of the Hadwen Botanical Club.

[1] Potter and Woodward; Notes on the Flora of Worcester County, Massachusetts. Rhodora **37**: 80–88. 1935.

[2] Jackson, Joseph; Flora of Worcester County, Massachusetts. Worcester Nat. Hist. Soc., 3d ed. 1909.

The rare and very local *Clematis verticillaris* is listed by Jackson from Brookfield and Warren. These two stations seem to have disappeared. It was reported from Southbridge in 1928, and only two other stations, one in Hardwick and one in Sutton, are known for the county.

Jackson lists *Cardamine parviflora* from Mt. Wachusett in 1909. Since then it has been found on Mt. Dan in Sturbridge in 1934, 1935, and 1938.

Euphorbia Preslii, reported from Millbury in 1909 by Jackson, was not reported again until 1934, from West Warren.

Jackson's station of *Pedicularis lanceolata* in Leicester is still known and one new station from Uxbridge was added in 1935.

The imposing *Vernonia noveboracensis*, a more commonly southern and western plant, has appeared in Blackstone, Mendon and Uxbridge.

Liatris spicata was first reported for New England in 1932 from Worcester. In 1937 a new station of one plant was reported again from Worcester and another in North Brookfield where several specimens were well established.

Two albino forms are worth noting. *Prunella vulgaris* forma *albiflora*, formerly reported only from Worcester and Princeton, was found in Auburn last summer; and *Polygala paucifolia* forma *alba*, formerly found only in Auburn in 1913, now is known from Millbury and Hubbardston.

The authors wish to extend their sincere thanks to all those who have aided in this work. Special thanks are due to Mrs. Mary C. Dodge for her unfailing interest and careful work and to Mrs. D. L. Salter for her contributions to the families *Cyperaceae* and *Gramineae* as well as for her aid in many other ways.

The plants enumerated in the following list are arranged by families according to the system used in Gray's Manual, 7th edition. In each case the species listed is accompanied by the name of the person who first discovered and reported the plant as growing within the county, the township where found, the date of finding, and, where an herbarium sheet exists, its deposition. For this purpose the following key is used.

C. The Herbaria of Clark University and the Hadwen Botanical Club.
W. The Herbarium of the Worcester Society of Natural History.
G. The Gray Herbarium and the Herbarium of the New England Botanical Club.

OSMUNDA CINNAMOMEA L., forma FRONDOSA (Torr. & Gray)

Britton. W. Worcester, May 9, 1899, *Cora Fairchild Ball.* Also C., no. 4676, Worcester, July 28, 1936, *W. B. Brierly.*

Pinus sylvestris L. C., no. 1092, Ashburnham, July 17, 1933, *W. H. Hodge.*

Sparganium chlorocarpum Rydb., var. acaule (Beeby) Fernald. G., no. 60477, Athol, October 2, 1930, *Alfred S. Goodale.* C., no. 4661, brook running into Cedar Pond, Sturbridge, Aug. 1, 1933, *David Potter and Walter H. Hodge.*

Digitaria ischaemum (Schreb.) Muhl. G., no. 2910, Southbridge, September 10, 1894, *Weatherby, Weatherby & Smith.* C., no. 5114, river bank, Lancaster, Sept. 8, 1936, *David Potter.* (*D. humifusa* Pers. of Gray's Manual, 7th ed. See Hitchcock, Manual of the Grasses of the U. S.)

Panicum linearifolium Scribn. C., no. 4672, Peat Meadow, Worcester, June 18, 1930, *D. L. Salter.* Also C., no. 4675, East Hubbardston Road, Princeton, June 5, 1933, *D. L. Salter,* and C., no. 4827, Sturbridge, July 15, 1935, *Mrs. D. Comins.*

Panicum boreale Nash. G., no. 1115, Worcester, June 22, 1911, *K. M. Wiegand.* C., no. 4671, Peat Meadow, Worcester, June 18, 1930, *D. L. Salter.*

Panicum spretum Schultes. C., no. 4668, growing in water, North Pond, Milford, June 21, 1931, *D. L. Salter.*

Panicum tennesseense Ashe. C., shore of North Pond, Milford, June 21, 1931, *D. L. Salter.* Also C., no. 4673, East Hubbardston Road, Princeton, June 5, 1933, *D. L. Salter.*

Hierochloë odorata (L.) Wahlenb. C., no. 8666, Westboro, May 21, 1937, *Cyrus Darling.*

Eragrostis capillaris (L.) Nees. C., no. 5859, Worcester, July 12, 1936, *D. L. Salter.*

Festuca octoflora Walt. G., one sheet from Uxbridge, *H. G. Jesup* ex herb. Wm. Francis Flint. C., no. 4877, Sturbridge, June 24, 1934, *D. L. Salter.*

Cyperus Houghtonii Torr. C., no. 4544, Lancaster, Aug. 24, 1934, *D. L. Salter.*

Carex Crawfordii Fernald, var. vigens Fernald. G., no. 4126, South Royalston, July, 1899, *James A. Bates.* C., no. 4538, Lancaster, Aug. 24, 1934, *D. L. Salter.*

Carex interior Bailey. C., no. 8647, Westboro, May 27, 1934, *D. L. Salter.*

Carex brunnescens Poir. C., no. 4560, Hardwick, May 21, 1933, *D. L. Salter.* Also C., no. 4581, Sturbridge, June 3, 1934, *Mrs. D. Comins* and C., no. 4555, Barre, June 7, 1935, *David Potter.*

Carex setacea Dewey, var. ambigua (Barratt) Fernald. C., no. 5812, Sturbridge, July 25, 1936, *Mrs. D. Comins.*

Carex panicea L. C., no. 2704, Bolton, June 3, 1933, *R. H. Lombard.*

Hemerocallis flava L. Leicester, June 8, 1935, *Mrs. Mary C. Dodge.* No herbarium sheet.

Tulipa Gesneriana L. W., Dudley, June 10, 1869, *F. E. Kimball.* Also Worcester, May 9, 1925, *N. P. Woodward.* A garden escape.

Convallaria majalis L. W., a pink-flowered form, Worcester, May 11, 1936, *Erford Newcomb.*

Tricyrtis hirta Hook., var. nigra Hort. C., no. 5698, Worcester, Sept. 28, 1936, *R. S. Illingworth.* A stand of about thirty plants growing in open woods.

This plant is illustrated and described in Flore des Serres, vol. 15, second series, no. 5, pl. 1540. 1862–1865. The following excerpt is taken from The Dictionary of Gardening, p. 87: "A small genus (five species) of half-hardy perennials, with short creeping rhizomes, natives of the Himalayas, Japan, and China."

Pogonia ophioglossoides (L.) Ker., forma albiflora Rand and Redfield. Oxford, July 7, 1928, *Earl W. Bemis.* See Flora of Mt. Desert, 152. 1894.

Carya ovalis (Wang.) Sarg. W., Worcester (Tatnuck), Feb. 12, 1936, *Clarence W. Kinney.* (*C. microcarpa* in part, of Gray's Manual, 7th ed.)

Bassia hyssopifolia (Pall.) Ktze. C., no. 5006, Peat Meadow, Worcester, Aug. 13, 1936, *Mrs. M. C. Dodge.* One plant found Sept. 29, 1935 and about thirty plants Aug. 13, 1936. Native of Southern Europe and the Levant.

Silene antirrhina L., var. divaricata Robinson. C., no. 6415, Shrewsbury, Aug. 1, 1937, *Mrs. Mary C. Dodge.*

Delphinium grandiflorum L., var. album Hort. W., Worcester (Webster Square), July 20, 1935, *Norman P. Woodward.* Spontaneous; 3 or 4 plants.

Aconitum Napellus L. W., Dudley, July 20, 1869, *F. E. Kimball.*

Dicentra spectabilis Lem. W., Dudley, June 10, 1869, *F. E. Kimball.*

Hydrangea paniculata Sieb. W., waste land, Worcester, Aug. 22, 1925, *Norman P. Woodward.* Plants still standing.

Deutzia scabra Thunb., var. plena Rehd. C., no. 8668, Leicester, July 2, 1937, *G. H. Pride.* Persisting for many years on the site of what was probably an old nursery.

Physocarpus opulifolius (L.) Maxim., var. luteus Kirchn. W., Peat Meadow, Worcester, June 4, 1938, *Norman P. Woodward.*

Spiraea Thunbergii Sieb. W., Peat Meadow, Worcester, April 24, 1927, *Norman P. Woodward.* Established in waste land, persists.

Spiraea van Houttei Zabel. W., Peat Meadow, Worcester, June 6, 1934, *Norman P. Woodward.*

Malus robusta Rehder (*M. baccata* × *pumila:* see Rehder's Man. Cult. Trees and Shrubs, p. 394, 1927). W., waste land on June Street, Worcester, July 16, 1938, *Norman P. Woodward.*

Amelanchier laevis Wiegand in Rhodora, **14**: 157. The common

species of the county, with glabrous leaves purplish on expanding. *A. canadensis* of Jackson's Flora in great part.

Amelanchier Bartramiana (Tausch) Roemer. Reported as growing on Mt. Wachusett, Princeton, by Nuttall. See Wiegand, Rhodora **14**: 160. In the herbarium of the New England Botanical Club represented from Ashburnham (*Knowlton*) and Hubbardston (*Weatherby*).

Filipendula rubra (Hill) Robinson. W., waste land, Worcester, July 14, 1937. *Norman P. Woodward.* 3 plants.

Filipendula Ulmaria (L.) Maxim. W., Dudley, July 22, 1869, *F. E. Kimball.*

Cladrastis lutea (Michx. f.) Koch. W., Worcester, July, 1933, *Doris E. Whittle.* 3 young saplings, spontaneous.

Trifolium pratense L., forma leucochraceum Asch. & Prantl. C., no. 7774, Worcester, Aug. 13, 1938, *G. H. Pride.* Also W., Worcester, Aug. 31, 1938 and Sept. 17, 1938, *Norman P. Woodward.*

Lathyrus latifolius L. W., old cellar hole, West Auburn, July 13, 1912, *Norman P. Woodward.* Also W., Worcester, June 23, 1934, *Norman P. Woodward.* A white-flowered form has been collected for several years by Mr. Woodward.

Oxalis montana Raf., forma rhodantha Fernald. W., Princeton, July 7, 1936, *Mrs. M. C. Dodge.* Rhodora, **22**: 143.

Euonymus europaeus L. Worcester, June 4, 1930, *Mrs. Mary C. Dodge.* An escape well established.

Acer pseudoplatanus L., var. purpureum Loudon. W., Worcester, June 23, 1937, *Norman P. Woodward.* Several young saplings growing spontaneously under a *Forsythia* hedge. Leaves green above and red-brown below. See Rehder's Man. of Cult. Trees and Shrubs, p. 566, 1927.

Impatiens biflora Walt., forma Peasei A. H. Moore. C., no. 5016, Sterling, Aug. 21, 1936, *Mrs. Mary C. Dodge.* A large stand by roadside on Prescott St. Corolla cream-color, with numerous and coalescent pink spots. Rhodora, **19**: 115.

Impatiens biflora Walt., forma citrina Weatherby. C., no. 3547, Worcester, Aug. 16, 1934, *Mrs. Mary C. Dodge.* Also C., no. 4139, Shrewsbury, Aug. 29, 1935, *Mrs. Mary C. Dodge.* Rhodora, **19**: 115.

Rhamnus Frangula L. W., spontaneous on the old Kinney Farm, Worcester (Tatnuck), May 30, 1934, *Clarence W. Kinney.*

Rhamnus davurica Pall., var. nipponica Mak. W., Old Kinney farm, Worcester (Tatnuck), Nov. 4, 1935, *Clarence W. Kinney.*

Professor Rehder states that this is the first specimen of this rare, far Eastern shrub to be reported to the Arnold Arboretum as found growing spontaneously in this country. This species was introduced into the Arnold Arboretum over fifty years ago. See Rehder's Man. of Cult. Trees and Shrubs, p. 591, 1927.

Malvastrum coccineum (Pursh) Gray. W., Worcester, June, 1889, *Kitty Ida Fish.* Escaped from cultivation.

Hypericum prolificum L. C., no. 3038, West Brookfield, July 18, 1933, *W. H. Hodge.*

Hypericum boreale (Britton) Bicknell. G., Douglas, October 29, 1911, *Fernald.* C., no. 2546, Sterling, July 22, 1933, *W. H. Hodge.* Also C., no. 2829, Webster, Aug. 7, 1933, *W. H. Hodge;* and C., no. 5275, Shrewsbury, Sept. 22, 1934, *David Potter.*

Viola cucullata Ait., forma albiflora Britton. G., Leominster, May 30, 1914, *Fernald & Bean.* C., no. 5262, Southboro, May 13, 1936, *David Potter.* Bull. Torr. Bot. Club, **17**: 124, 1890.

Viola fimbriatula Sm., forma albescens Farwell. C., no. 4302, Upton, May 25, 1935, *Mrs. Mary C. Dodge.* 3 plants with pure white flowers. Am. Mid. Nat., **11**: 66, 1928.

Viola lanceolata L. × primulifolia L. C., no. 4278, Worcester, June 22, 1935, *Mrs. Mary C. Dodge.*

Elaeagnus angustifolia L. W., Peat Meadow, Worcester, June 24, 1938, *Norman P. Woodward.*

The Arnold Arboretum states, "We have no specimens of escapes from this region and are glad to have your specimens as a record. We had it only from Missouri and New Mexico as an escape." The Gray Herbarium writes, "We have no specimens of *Elaeagnus angustifolia* as an escape from anywhere in North America . . . Cordial thanks for the specimens."

Oenothera parviflora L. G., Uxbridge, September 9, 1878, *J. W. Robbins* (as *O. Oakesiana*). W., Peat Meadow, Worcester, Aug. 6, 1938, *Norman P. Woodward.* Several plants.

Myriophyllum humile (Raf.) Morong, forma capillaceum (Torr.) Fernald. C., no. 2827, Webster Lake, Webster, Aug. 7, 1933, *W. H. Hodge.* Also C., no. 5814, Coachlace Pond, Clinton, Aug. 19, 1936, *David Potter;* C., no. 7911, Rutland, Sept. 28, 1938, *F. H. Howard;* C., no. 7909, Lake Samoset, Leominster, Oct. 1, 1938, *F. H. Howard;* C., no. 7910, Grafton, Oct. 12, 1938, *F. H. Howard.*

Astrantia major L. W., Berlin, July 17, 1934, *Mrs. Charles M. Field.* A garden escape.

Aegopodium Podagraria L. W., Hadwen Park, Worcester, June 30, 1934, *Norman P. Woodward.* A fine stand of several plants near pond.

Daucus Carota L., forma roseus Farwell. W., Peat Meadow, Worcester, Aug. 22, 1918, *Norman P. Woodward.* Rep. Mich. Acad. Sci. **21**: 369, 1920.

Hottonia inflata Ell. C., no. 6921, Cedar brook, Westboro, June 12, 1937, *Cyrus Darling.*

Ligustrum vulgare L. Worcester, May 24, 1938, *Mrs. Mary C. Dodge.* Waste ground and edge of woods. Three widely separated stations.

HELIOTROPIUM EUROPAEUM L. W., Worcester, June, 1886, *Kitty Ida Fish.* Spontaneous in garden.

VERBENA BRACTEOSA Michx. C., no. 5045, Worcester, July 27, 1936, *R. H. Lombard.*

TEUCRIUM CANADENSE L. W., border of wet woods, Worcester, Aug. 1, 1934, *Norman P. Woodward.*

PHYSOSTEGIA VIRGINIANA (L.) Benth., var. ALBA Hort. W., Peat Meadow, Worcester, Aug. 14, 1937, *Norman P. Woodward.* Flowers a pure white. A fine station. See Bailey's Cyc. Hort., vol. III, p. 1328, 5th ed., 1906.

LAMIUM AMPLEXICAULE L. C., no. 3629, Worcester, Oct. 3, 1934. A cleistogamous form.

SALVIA PATENS Cav. W., Dudley, June 12, 1869, *F. E. Kimball.*

MENTHA PULEGIUM L. Waste ground, Stafford St., Worcester, Sept. 19, 1935, *Mrs. Mary C. Dodge.* No herbarium sheet.

PHYSALIS ALKEKENGI L. C., no. 5015, Peat Meadow, Worcester, June 21, 1936, *Mrs. M. C. Dodge.*

CHELONE LYONI Pursh. W., Worcester, Sept. 15, 1937, *Norman P. Woodward.* A fine colony, spontaneous and spreading. Rare in New England.

ILYSANTHES ANAGALLIDEA (Michx.) Robinson. G., Southboro, September, 1881, *Walter Deane.* W., C., no. 6249, Millbury, June 29, 1935, *Mrs. M. C. Dodge.*

VERONICA VIRGINICA L. W., Dudley, July 1, 1869, *F. E. Kimball.*

CASTILLEJA COCCINEA (L.) Spreng. A form with yellow floral leaves, growing with the type. W., Worcester, no date, *Edith Billings.*

CATALPA BIGNONIOIDES Walt. W., Worcester, July 2, 1938, *Mrs. M. C. Dodge.* Fully established.

MARTYNIA FRAGRANS Lindl. C., no. 5009, Grafton, Sept. 7, 1936, *Mrs. Mary C. Dodge.* Stray in cultivated ground.

DIANTHERA AMERICANA L. C., no. 5124, swamp, Holden, Aug. 2, 1936, *Cyrus Darling.*

GALIUM SYLVATICUM L. W., Worcester, Aug. 22, 1936, *Norman P. Woodward.* Spontaneous in grassland.

LONICERA TATARICA L. G., North Leominster, May 30, 1914, *Fernald & Bean.* C., no. 7350, Auburn, April 24, 1938, *O. L. Seaver.* Also C., no. 7349, pasture, Shrewsbury, May 17, 1938, *M. E. Marlborough.*

SAMBUCUS CANADENSIS L., forma CHLOROCARPA Rehder. W., Hadwen Lane district, Worcester, Sept. 2, 1934, *Roger H. Hardy.* Four scattered shrubs. See Rehder's Man. Cult. Trees and Shrubs, p. 797, 1927.

Professor Rehder writes, "The plant is in cultivation at this Arboretum and was raised from seed collected near Wilmington Junction, N. H. Your specimen represents the second station for this form, and constitutes the first *spontaneous specimen* in our Herbarium." (Sept. 11, 1934.)

Lagenaria vulgaris Ser. Peat Meadow, Worcester, Sept. 20, 1936, *Mrs. Mary C. Dodge*. Noted again in 1937. No herbarium sheet.

Lobelia cardinalis L., forma alba (A. Eaton) St. John. W., West Upton, 1890, *Kitty Ida Fish*. Also C., no. 4188, Uxbridge, Sept. 1, 1935, *Dr. M. R. Sharpe*. Rhodora, **21**: 217.

Lobelia cardinalis L., forma rosea St. John. Brook-bed, Worcester, July 16, 1917, *Mrs. Frank E. Lowe*. Rhodora, **21**: 217.

Aster novae-angliae L., forma geneseensis House. W., Peat Meadow, Worcester, Sept. 18, 1935, *Norman P. Woodward*.

Aster vimineus Lam., var. foliolosus (Ait.) Gray. W., Peat Meadow, Worcester, Aug. 31, 1936, *Norman P. Woodward*. Rays lilac-tinged.

Aster puniceus L., var. firmus (Nees) T. & G. W., Worcester, Sept. 14, 1936, *Norman P. Woodward*.

Helianthus annuus L., var. bicolor Cockerell. W., Peat Meadow, Worcester, Aug. 31, 1936, *Norman P. Woodward*. Rays red-brown. Two widely separated stations.

Erechtites hieracifolia (L.) Raf., var. intermedia Fernald. W., Worcester, Aug. 18, 1934, *Norman P. Woodward*. Rhodora, **19**: 27.

Erechtites hieracifolia (L.) Raf., var. prealta (Raf.) Fernald. W., Worcester, Aug. 18, 1934, *Norman P. Woodward*. Rhodora, **19**: 27.

Arctium minus (Hill) Bernh., forma leucocephalum House. W., Worcester, Aug. 8, 1919, *Norman P. Woodward*. Bull. N. Y. State Mus. **243–244**: 41, 1923.

Clark University
Worcester, Mass.

NEW PLANTS FROM KENTUCKY

E. Lucy Braun

Arabis **perstellata**, sp. nov. Planta perennis, e basi ramosa; ramis in anthesi 1–5 dm. post anthesim 3–3.5 dm. longis dense stellato-pubescentibus per omnes partes griseis; foliis radicalibus parvis lamina 1–2.5 cm. longa lyrato-pinnatifida petiolo tenui; foliis caulinis valde repando-dentatis vel infimis lyrato-pinnatifidis 1–3 cm. longis 5–8 mm. latis sessilibus basi auriculatis; pedicellis in anthesi 2.5–4 mm. longis deinde elongatis post anthesim ad 8–9 mm. in longitudine; petalis roseis 3–4 mm. longis; siliquis 2 cm. longis.—Wooded hillsides, Elkhorn Creek, Franklin County, Kentucky, May 6, 1936, *Braun*, Ky. no. 1226 (type in Gray Herbarium); April 20, 1939, *Braun*, Ky. no. 2215, and May 11, 1939, *Braun*, Ky. no. 2413 (topotypes distributed to a number of herbaria).

Plant somewhat similar in aspect to *A. dentata*, but perennial and of smaller size, decidedly gray due to the dense fine stellate pubescence, *both* surfaces of basal and cauline leaves stellate-pubescent, somewhat more densely and finely so beneath; cauline and basal leaves smaller. Flowers larger than in *A. dentata*, pink instead of yellowish, and on pedicels about twice as long. Siliques divaricately spreading as in *A. dentata*, but on slender pedicels nearly half the length of the silique. Lacks the coarse aspect of *A. dentata*.

Some variation in height of plants and in leaf-size occurs; stems occasionally 3 dm. high at flowering, and 4 dm. in fruit; leaves on some plants collected in a rainy spring larger than those of type, basal with blades up to 4 cm. in length and pinnatifid only at base, cauline reaching 4 cm. in length, and 1.5 cm. in width including the salient teeth. Foliage of largest-leaved plants less gray but exhibiting same type of pubescence as smaller-leaved plants. Petals 3–4 mm. long, 1.2 mm. wide at apex, erose, claws white, blades varying from light rose-pink to darker with deep purplish-pink veins. Sepals 2.5 mm. long, spreading at right angles to pedicel and petals, forming a cross; long strigillose hairs interspersed with the appressed stellate hairs. Flowering pedicels from 2.5 mm. long to 7 mm. long on older flowers, divaricately spreading, or slightly reflexed; raceme at first compact, becoming elongate, not branched. Fruiting pedicels divaricate, siliques straight or slightly curved, slightly inclined upward. Silique faintly nerved for about one-third its length; seeds in one row, not winged; some of the trichomes on silique simple or merely bifurcate, others stellate.

At flowering time, basal leaves from previous season are present. Later, these wither, and a new short leafy shoot develops between the elongate fruiting stems. Late in the summer this appears as a rosette elevated on a stem about an inch long on which a few dry leaves are visible. Additional rosettes may develop from basal buds. The late summer leaves are very densely appressed-stellate-pubescent on both surfaces. On some plants, scars of several series of rosette-leaves are seen on what at first might be mistaken for tap-root, as the rosette axis continues the tap-root axis. Such old and leafless stems may become decumbent and covered by humus and forest litter. Plants of steep wooded hillsides, sometimes on shaded mossy and humus-covered limestone rocks.

Two immature specimens of this species were found in the Gray Herbarium, at one side of a sheet of large-leaved *A. dentata* from

"sandy borders of Ohio River, Kentucky." A pencil line was drawn around these two pieces and, in Dr. Robinson's handwriting, is the annotation "something else." Just below these two pieces, in Asa Gray's writing, is the locality, "N. Kentucky."

ARABIS PERSTELLATA × ARABIS LAEVIGATA (Muhl.) Poir. One plant of an Arabis which appears to be a hybrid between *A. perstellata* and *A. laevigata* was found in the type locality of *A. perstellata.* This plant branches at the base like *A. perstellata,* but one stem is longer and stouter than the others, with branches from some of the leaf-axils and inflorescence. The leaves are elongate and similar in shape to those of *A. laevigata.* Any one stem of this apparent hybrid might be mistaken for *A. laevigata* but for the pubescence. Basal leaves stellate-pubescent on both surfaces, but not densely so. Stem and cauline leaves pubescent with scattered simple, bifurcate and stellate hairs. Pedicels and calyx with long simple hairs. Petals white to pinkish, about one-fourth to one-third longer than the *ascending* sepals. Hybrid specimen (*Braun,* Ky. no. 2216) and specimen of *A. laevigata* from same locality (*Braun,* Ky. no. 2217), deposited in Gray Herbarium.

DRABA RAMOSISSIMA Desv., var. **glabrifolia,** var. nov. Foliis rosularum hiemalium et caulium floriferarum supra fere glabris subtus sparsissime stellato-pubescentibus nitentibus.—Limestone cliffs, Brooklyn Bridge, Kentucky River, Jessamine County, Kentucky, April 17, 1937, *Braun,* Ky. no. 1332 (TYPE in Gray Herbarium, ISOTYPE in author's herbarium).

Draba ramosissima Desv. is a highly variable species, material in the Gray Herbarium consisting of two somewhat unlike groups of plants: one with cauline leaves scarcely reduced in size, or even larger than the basal leaves, and strongly branched inflorescence; the other with the basal rosette prominent, the stem-leaves similar but gradually reduced upward. Leaves vary greatly, from ones merely repand-dentate to those laciniate-toothed or almost pinnatifid. Pubescence varies, some plants so densely stellate-pubescent all over as to appear gray; others, though green, are stellate-pubescent on all surfaces The above variety belongs to that group with pronounced basal rosette, which, in the Brooklyn Bridge plants, is evergreen. Specimens of C. W. Short's, from "cliffs of Ky. river," are similar in growth-habit to the plant described above, but are much more pubescent.

CASSIA HEBECARPA Fernald, var. **longipila,** var. nov., caule sparse villoso per omnes partes; petiolis prope glandulas dense longeque villosis, saepius cum pilis lineam inter glandulam et petioli basin

formantibus; calyce valde villoso cum pilis longis albis.—Dry slopes, Knott County, Kentucky, July 23, 1937, *Braun*, Ky. no. 1633 (TYPE in Gray Herbarium).

The conspicuous long hairs on the petiole near the gland and the long white hairs on the sepals distinguish this variety.

POLEMONIUM REPTANS L., var. **villosum**, var. nov. Planta pubescens per omnes partes cum pilis mollibus aliis glanduliferis aliis eglanduliferis.—Kentucky and Ohio. Woods, Beaver Pond, Adams County, Ohio, April 18, 1930; near Carter P. O., Lewis County, Kentucky, April 14, 1936, *Braun*, Ky. no. 1154; Beaver Pond, Adams County, Ohio, March 25, 1939; Hazel Branch, Lewis County, Kentucky, April 2, 1939, *Braun*, Ky. no. 2178 (TYPE in Gray Herbarium, ISOTYPE in author's herbarium); Ohio Brush Creek, Adams County, Ohio, April 9, 1939; Cave Creek, Pulaski County, Kentucky, April 25, 1939, *Braun*, Ky. no. 2296.

These densely villous plants with stems long-villous, and with inflorescences and the rachises of young leaves so pubescent that they are whitish, present a striking contrast to the nearly glabrous species with shining stems. The variety is so viscid that it adheres to the paper on which it is dried. The long hairs are more widely spaced on leaves and calyx; hairs on the stems sometimes 1–1.5 mm. long. Plant generally of shorter stature than the species, with smaller flowers, and leaflets tending to be broad-elliptic. Pubescence on the radical leaves persists throughout the season. Gradations between the species and variety occur, some plants showing the long hairs on stems, petioles and rachises, but with the inflorescence finely short-puberulent. Occasional plants with shining stems have scattered long hairs; these seem best referred to the species.

Polemonium reptans var. *villosum* is abundant at the western front of the Allegheny Plateau in Adams County, Ohio, and in Lewis and Fleming Counties, Kentucky, where it seems almost to replace the glabrous species.

EUPATORIUM **deltoides**, sp. nov. Caulibus 4–6 dm. altis, glabris; foliis oppositis, valde tenuibus, late deltoideis, latitudine et longitudine aequalibus, maioribus 10 cm. in utramque partem, inaequaliter grosseque dentatis, glabris pilis minutis paucis subtus in costis et in foliorum marginibus exceptis; petiolis laminas longitudine aut omnino aut fere adaequantibus, glabris, vel eis foliorum diminutorum inflorescentiae puberulentibus; foliorum jugo infimo remoto, laminis parvis, 2 cm. longis saepe marcescentibus in anthesi; inferiore nervorum jugo prominente, folii marginem e basi per 5–15 mm. formante, folii basi petiolo proxima late cuneata sed lamina supra partem cuneatam in

formam subcordatam dilatata; apice acuto vel acuminato; corymbo plano, parvo et patente; pedicellis puberulentibus; capitulis ca. 15-flosculis, floribus albis, corollae dentibus apice extus minute pubescentibus; involucro 4 mm. alto, squamis lanceolatis, uniseriatim positis, aequalibus, 1 vel 2 exterioribus ceteris aliquanto brevioribus nonnullisque interioribus tenuissimis et paene hyalinis ceteris longioribus exceptis, usque ad medium binis striis praeditis, parte autem superiore fimbriatis praecipue interioribus, squamarum exteriorum apicibus fusco-viridibus et cuspidatis; achaeniis in anthesi 2–2.5 mm. longis.—KENTUCKY: in moist sandstone rockhouses* of the basal Pottsville formation, usually in company with *Thalictrum clavatum*, *Heuchera parviflora* var. *Rugelii* and *Cystopteris bulbifera*, but much more local in occurrence; near Cumberland Falls, Whitley County, in young flower, September 6, 1939, *Braun*, Ky. no. 2583 (TYPE in Gray Herbarium, ISOTYPES deposited in several herbaria); in bud, Dog Slaughter Creek, Whitley County, September 6, 1939, *Braun*, Ky. no. 2593; vegetative shoots and dry flower-stalks of previous season, near Cumberland Falls, Whitley County, June 25, 1936, *Braun*, Ky. no. 1271, and Tight Hollow, Wolfe County, April 26, 1931, *Braun*, Ky. no. 220.

Eupatorium deltoides belongs to the Urticaefolia group; it is very striking because of its exceedingly thin, broad, long-petioled leaves which have the lower pair of lateral veins prominent, forming the leaf-margin for 5 to 15 mm. from base, the immediate leaf-base broadly cuneate, but blades flaring above vein-margin produce a subcordate base. The leaves are mostly concentrated on the upper half of the stem and always arranged in life in a perfect mosaic inclined slightly to the one-sided light of the peculiar habitat. Though fairly large, the whole plant is so delicate that it probably could not withstand the impact of heavy rain. It is because of the protected situations in which the plant always grows that it is possible to collect dried inflorescences with complete involucres months after flowering.

UNIVERSITY OF CINCINNATI,
Cincinnati, Ohio

* The term "rockhouse" is used to designate a peculiar type of overhang, somewhat resembling the mouth of a cave, which occurs frequently in cliffs of the Pottsville conglomerate. The floor of such rockhouses is sandy, dry or moist depending on seepage; the roof arches in more or less hemispheric form, and cuts off all rain except what may blow in from the side, and all overhead light.

DISTRIBUTIONAL NOTES ON CERTAIN AQUATIC UTRICULARIAS IN QUEBEC

George B. Rossbach

In Rhodora, April, 1939, the writer discussed, among other things, the geographical distribution of northeastern American species of Utricularia. Since that writing I have had occasion to study some aquatic Utricularias from Quebec which Mr. Roger Gauthier of Université de Montréal very kindly loaned to me for identification. Among these specimens are three species of Utricularia, namely U. gibba L., U. purpurea Walt., and U. minor L., all of which exhibit extensions of their ranges as recorded in my last article on the genus. For the most part, these northern locations are well north into Quebec. Almost certainly further extensions will become known when more general collecting of the genus has been done in eastern Canada.

Utricularia gibba L. I recorded as known in the East north to Lunenburg and Yarmouth counties, Nova Scotia, Maine, and Megantic Co., Quebec. Collections of U. gibba in the herbarium of the Université de Montréal from Quebec are as follows: "Saint-Tite: lac Pierre-Paul. Flottant entremêlé en petits paquets, sous *Brasenia Schreberi* etc., dans les parties marécageuses du lac." *R. Gauthier*, no. 2343, Aug. 28, 1934. "Saint-Tite: lac Pierre-Paul. Flottant entremêlé et formant de petites masses sous les feuilles de *Brasenia Schreberi* etc., dans les parties marécageuses du lac." *R. Gauthier*, no. 2275, Aug. 28, 1934. "Saint-Alexis-des-Monts, comté de Maskinongé: lac à la Perchaude, chemin des Pins Rouges. Flottant en petites masses entremêlées, sous *Brasenia Schreberi*. Lac très vaseux." *R. Gauthier*, no. 2212, Aug. 8, 1934. "Saint-Alexis-des-Monts, comté de Maskinongé: lac du Pic Elevé. Dans quelques pouces d'eau. Attaché à plantes aquatiques. Pas remarqué de spécimens flottants. Lac pas marécageux à cet endroit." *R. Gauthier*, no. 2219, Aug. 11, 1934.

In the last writing the known range of U. purpurea Walt. was recorded as north into Nova Scotia, New Brunswick, and Montreal Co., Quebec. But collections in the Université de Montréal add to this northern range the following localities: "Saint-Alexis-des-Monts, comté de Maskinongé: lac du Pic Elevé. Flottant." *R. Gauthier*, no. 2188, Aug. 3, 1934. "Environs de Sainte-Emélie-de-l'Energie: lac à l'Ile, comté de Berthier. (Près de lac à la Raquette.)" *R. Gauthier*,

no. 2158, July 17, 1934. "Saint-Alphonse, comté de Joliette: lac Vert." *R. Gauthier*, no. 596, no. 541, July 13, 1933.

U. MINOR L. was last recorded by the writer as ranging on the Atlantic Coast north to the Straits of Belle Isle, Labrador, through Newfoundland, also on Greenland. It is well represented about the Gulf of St. Lawrence, but seemingly has not been collected appreciably inland in the East north of northern New England, northern New York, and the Lake States. One might well expect U. MINOR to occur, however, north of the United States in Quebec (and in Ontario). Mr. Gauthier has collected plants of U. MINOR from Quebec as follows: "Sainte-Emélie-de-l'Energie; décharge du lac Caribou près du lac à la Raquette (Berthier)." *R. Gauthier*, no. 2571, July 17, 1934. "Saint-Jean-de-Matha, comté de Joliette. Petit lac vaseux près du lac Noir." *R. Gauthier*, no. 2097, July 3, 1934. "Campbell's Bay, comté de Pontiac. Lac à l'ours. Dans 3 pouces d'eau. Légèrement enraciné dans le sable." *R. Gauthier*, no. 2479, July 31, 1935.

All specimens of U. MINOR save the last recorded collection are plants or parts of plants bearing unusually reduced, very slender, nearly all basally one-or two-parted, and sparsely dichotomized leaves upon the younger growth which composes most of these specimens. Also the noticeably slender plants from Campbell's Bay have small portions bearing similarly reduced leaves. Older portions of all specimens, however, do bear the much more usual leaves having basally three parts, more dichotomies, and broader divisions. Though the most reduced leaves resemble those of U. GIBBA, they still are usually coarser and not quite like those of GIBBA in appearance, and their comparatively large bladders are less darkly colored and are much more, in fact nearly quite, homogeneous in size. Several sheets were observed of many of the collections recorded in this article.

STANFORD UNIVERSITY, California.

A NEW SOUTHERN KALMIA.—KALMIA LATIFOLIA L., var. **laevipes**, var. nov., pedicellis glabris vel sparsissime glanduloso-verrucosis.—On or near the Coastal Plain, southeastern Virginia to Alabama. VIRGINIA: wooded slopes along Gordon Creek, east of Barrat's Bridge (or Ferry), James City County, September 19, 1939, *Fernald & Long*, no. 11,393; moist or swampy woods, Little Neck, Princess Anne County, *Fernald & Long*, no. 4111; Suffolk, Nansemond County, July 13, 1895, *J. W. Blankinship;* dry woods of a "hammock," Great

Dismal Swamp, west of Yadkin, August 20, 1939, *Fernald & Long*, no. 11,101 (TYPE in Herb. Gray; ISOTYPE in Herb. Phil. Acad.). SOUTH CAROLINA: moist thicket by rocky stream, 8 miles east of Pendleton, Anderson County, August 20, 1927, *Wiegand & Manning*, no. 2371. GEORGIA: damp shady woods along Savannah River near Sister's Ferry, Effingham County, June 12, 1903, *Harper*, no. 1814. ALABAMA: rich woods near stream, 8 miles north of Headland, Henry County, August 11, 1927, *Wiegand & Manning*, no. 2370.

Typical and wide-spread *Kalmia latifolia* has the pedicels more or less densely viscid with stalked glands commonly somewhat mixed with glandless trichomes, the clammy pedicels quickly adhering when handled and thus rendering the flowering branches, when brought in from the woods, often unsightly. Var. *laevipes*, in its extreme development, has the great advantage of lacking this viscid indument, the pedicels of the type and of most of the specimens cited being quite smooth or with the merest suggestion of sessile glandular spots. In southeastern Virginia the variety passes by gradual stages into typical *K. latifolia*, but the large shrubs seen in the Great Dismal Swamp were of the extreme variety.

Kalmia latifolia, "Habitat *in* Marilandiae, Pensylvaniae, Virginiae *sylvis declivibus versus rivulos*," started under that name and as the original *Kalmia* in L., Amoen. Acad. iii. 13 (Nova Plantarum Genera) (1751), and was taken up in Species Plantarum (1753) without further elucidation. The original very detailed description (Amoen. Acad.) had "Pedunculi *filiformes, nudi, pilis glutinosis adspersi*." Linnaeus also cited Gronovius, Catesby and Plukenet. The Gronovian account of "**The common Laurel, vulgarly called Ivy**", had an inconclusive diagnosis but cited Plukenet's figure (Mant. 49, t. 379, fig. 6) which shows conspicuously pilose pedicels. The Catesby plate (ii. 98) cited by Linnaeus is as it should be, a beautiful illustration of var. *laevipes*. Since the Linnean specimen and original diagnosis and the Plukenet plate were of the common variety with pilose and stipitate-glandular pedicels, I am treating that as the type of the species.—M. L. FERNALD.

VII INTERNATIONAL BOTANICAL CONGRESS.—The Organizing Committee of the Seventh International Botanical Congress which was to be held in Stockholm, 1940, has, on account of the present international situation and in conjunction with the Swedish Government, decided to postpone all preparations for the Congress until further notice. This

means that there will be no Congress during 1940. The Organizing Committee and its Executive have not, however, been dissolved, but will continue in office, and will, at the first opportunity, communicate with the leading botanical circles in different countries with a view to ascertaining a suitable time for the Congress to be held.—

ROB. E. FRIES, *President*
HUGO OSVALD, *General Hon. Secretary*

Stockholm, October, 1939.

A NEW VARIETY OF TRIPHORA

W. H. CAMP

SEVERAL years ago the late Professor J. H. Schaffner called my attention to a rather unusual series of specimens of the autumnal flowering orchid *Triphora* which he and Dr. R. B. Gordon had collected near Columbus, Ohio. Shortly before his death, I visited Professor Schaffner and in the course of our conversation he mentioned having again visited the locality where the original specimens were gathered, at least on several occasions and at different times of the year. His conclusions were that the character which first brought the plants to his particular attention was constant from year to year and, therefore, that the plants merited description as being different from the more common *Triphora trianthophora.*

Professor Schaffner's death prevented him from bringing his work on this material to its logical end. I have since taken it upon myself to pursue the matter somewhat further and have come to the conclusion that this material should be given at least varietal rank. I therefore propose the following:

TRIPHORA TRIANTHOPHORA (Sw.) Rydb. var. **Schaffneri** Camp, var. nov. A speciei pedunculis erectis differt.

Separated solely on the basis of erect peduncles I have the following specimens: OHIO: Franklin Co., Bexley, near Columbus, *Robt. B. Gordon & John H. Schaffner,* in fruit, Oct. 20, 1934, TYPE, Britton Herb., N. Y. Bot. Gard. INDIANA: along Sugar Creek about 4 miles northwest of Marshall, *C. C. Deam 7202,* in flower, Aug. 21, 1910; Dunreith, *E. Pleas,* in fruit, Oct. 1896; Mattsville, *Guy Wilson,* in fruit, Oct. 1, 1893. MISSOURI: Jackson Co., along (the) Blue, north of Dodson, *K. K. Mackenzie 452,* in flower, Sept. 13, 1901; Courtney, *B. F. Bush 1788,* in fruit, Oct. 5, 1902. ARKANSAS: L(ittle) R(ock), without collector (ex Herb. Dr. H. E. Hasse), in flower, Aug. 16, 1885.

Fruiting plants with stiffly erect peduncles reminiscent, at least in this character, of the coarser Caribbean *Triphora surinamense* (Lindl.) Britton of which I have seen specimens from Dominica, Porto Rico and Guadeloupe. Unfortunately, I have not been able to examine authentic flowering material of this new variety, but was informed by Professor Schaffner that the flowering peduncles of plants from the type locality were also erect and not nodding or drooping as is generally the case in the more common and typical form of *trianthophora*.

Apparently, var. *Schaffneri* is scattered in, roughly, the northwestern portion of the range of the species and is likely to be met with in a somewhat wider area than indicated by the specimens here cited.

Since the above was written, Professor Fernald has kindly loaned me his recently received photograph of the type of *Arethusa parviflora* Michx. Examination of this photograph reveals that, in some cases at least, the pedicels have been twisted out of their natural position prior to pressing and thus simulate the above described variety. It is therefore my opinion that *Arethusa parviflora* Michx. (1803) is a straight synonym of *A. trianthophora* Sw. (1800) [= *Triphora trianthophora* (Sw.) Rydb.].—W. H. C.

The New York Botanical Garden

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